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UNCERTAINTY, INTELLIGENCE, AND IPB:

THE ROLE OF THE INTELLIGENCE OFFICER
IN SHAPING AND SYNCHRONIZING THE
OPERATIONAL BATTLEFIELD

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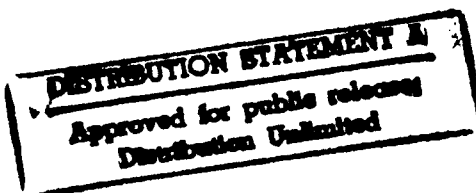
William M. Caniano

Major, US Army

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

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TABLE OF CONTENTS

| SECTION | | PAGE |
|-------------------|---|------|
| ABSTRACT | | 11 |
| I | Uncertainty and Intelligence..... | 1 |
| II | Estimates and IPB | 2 |
| III | IPB: The Process and the Products..... | 5 |
| IV | IPB at the Operational Level..... | 12 |
| V | IPB and Air Operations..... | 15 |
| VI | IPB and Maritime Support..... | 17 |
| VII | IPB, Joint Doctrine, and the Counterargument..... | 20 |
| VIII | Conclusion and Recommendation..... | 24 |
| NOTES..... | | 27 |
| BIBLIOGRAPHY..... | | 30 |



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ABSTRACT

This paper examines an analytical process which may assist in shaping and synchronizing the battlefield at the operational level. The process, known as Intelligence Preparation of the Battlefield (IPB), has been employed with success by the U.S. Army at its tactical level for nearly a decade. IPB provides a road map of sorts for intelligence officers to formulate analysis; direct intelligence collection; frame time and space considerations; and facilitate staff synchronization. This paper examines its applicability at the operational level and in support of joint operations. It includes a brief description of the basic IPB methodology, compares traditional estimates with IPB-derived assessments, and addresses IPB's suitability in two areas: support to air operations and maritime support of land operations. In addition, the paper discusses the present state of joint intelligence practices vis-a-vis current JCS publications and closes with a recommendation that an IPB-type process be developed for joint operations.

I

UNCERTAINTY AND INTELLIGENCE

"...a great part of information obtained in war is contradictory, a still greater part is false, and by far the greatest part is uncertain..."

Clausewitz ¹

Clausewitz's dictum about the uncertain nature of war remains true today. "From Plato to NATO," Martin van Creveld observed, "the history of command in war consists ostensibly of an endless quest for certainty--certainty about the state and intentions of the enemy's forces; certainty about the manifold factors that constitute the environment in which the war is to be fought ..." ² Admittedly then, the quest for absolute certainty is futile; however, uncertainty can be mitigated. One means to minimize this condition is intelligence. ³

At all levels of command and in each of the armed services, commanders must have a reasonable vision of what the battle might look like. Though technical advances throughout the past few decades have changed the scope of intelligence work, the near-real time collection of signals and images do not, in and of themselves, convey answers about enemy intent. Therein remains the quintessential role of the intelligence officer: the aggregate analysis and presentation of reasoned projections of the battlefield. This struggle between the abiding, yet ineffectual, quest for certainty and the necessity to assess the

potential actions of the enemy at a given place and time frames the intelligence dialectic. This serves to establish the basic commonality of intelligence work between all the services and all levels of command.

This paper examines a recent procedural advance which may assist in lessening that uncertainty and shaping the battlefield at the operational level. The process, known as Intelligence Preparation of the Battlefield (IPB), does so by providing a road map of sorts for intelligence officers to formulate analysis; direct intelligence collection; frame time and space considerations; and facilitate staff synchronization.

II

ESTIMATES AND IPB

"With many calculations, one can win; with few one cannot. How much less chance of victory has one who makes none at all! By this means I examine the situation and the outcome will be clearly apparent."

Sun Tzu ¹

The first step towards mitigation of uncertainty is the preparation of intelligence estimates. Regardless of the armed service and the level of operation, staff intelligence officers prepare estimates which permit commanders to cope better with uncertainty, and to plan and direct operations beyond his field of vision and into the future. These assessments are derived largely from geographic and order of battle data bases, meteorological references, and technical and human intelligence

sources. Traditionally, these estimates were exclusively textual; usually too long; and sometimes produced too late in the planning process to be of maximum utility. Moreover, the length of these traditional estimates and the time needed to prepare them seems potentially incompatible with the current demands of hasty or crisis action planning.

The Army recognized these shortcomings, veered away from the formatted estimate and, over the course of the past decade, developed the analytical process known as IPB. This process involves a detailed and systematic analysis of enemy, weather, and terrain factors to provide a comparative data base of enemy capabilities and courses of action. The analysis, in turn, forms the basis for friendly planners to determine the conditions for military success, and as a strawman from which to shape the battlefield and to formulate branches and sequels. ²

Though most of these functions are not new for intelligence officers, the advent of IPB dramatically changed the way Army intelligence officers approached the preparation of estimates. First, the process standardized analytical methodology. Second, it boldly integrated environmental factors with threat capabilities and intent, attempting to get within the enemy commander's decision cycle. Third, IPB emphasized the use of graphics rather than text to depict and communicate combat information and intelligence. It clearly took intelligence analysis and estimates away from a tendency to gravitate towards

an academic standard to more of a warfighting focus. The process produces a series of templates and overlays which are better received and more functionally compatible with wargaming, and the work being done in operations centers and planning cells. Consequently, IPB raised the expectations of planners about the value of intelligence and its role in the planning process. ³ Today, in most all tactical level units, IPB drives the entire combat planning process. ⁴ With IPB, the intelligence estimate is no longer just a weighty document that stands alongside other staff estimates, but is the spotlight for staff synchronization.

Though the IPB process was originally designed to support the intelligence demands of AirLand Battle at the tactical level, I submit that now is the time to explore modifying it for application at the operational level and in support of joint operations. This paper examines that applicability. In addition, the paper discusses the current state of joint intelligence practices vis-a-vis the procedures outlined in current JCS publications. It begins with a very brief description of the basic IPB methodology and highlights the graphic products produced at each stage of the process. Next, the paper discusses how the basic process can be modified for application at the operational level. Then it addresses IPB's suitability in two areas: support to air operations and maritime support of land operations. It closes with a critique of some current joint publications and a recommendation.

III

IPB: THE PROCESS AND PRODUCTS

'And therefore I say: Know the enemy, know yourself; your victory will never be endangered. Know the ground, know the weather; your victory will be total.'

Sun Tzu ¹

The IPB process at the tactical level is cyclical and involves five major steps: area evaluation; terrain analysis; weather analysis; threat evaluation; and threat integration. The process begins with assignment of an area of operations; the pace quickens following receipt of a warning order and the initiation of deliberate or hasty planning; and continues during the conduct of operations when combat information is analyzed to confirm or deny enemy courses of action.

The first step is area evaluation. It is the initial phase in mission analysis and frames the intelligence problem. In very broad terms the intelligence officer surveys the mission and begins to assemble a database. It is sometimes very academic and is often referred to as the homework stage. It is here for example that the intelligence officer collects maps, climatological studies, and demographic surveys. Moreover, during this stage the area of operation and area of interest will be clearly defined. The area of operation bounds terrain and weather analysis efforts and the area of interest focuses threat evaluation, threat integration, and intelligence collection.

The second step is terrain analysis. At the Army's tactical level this is a very detailed procedure which examines the geographic factors which can affect trafficability and visibility. Terrain analysis attempts to reduce the uncertainties regarding the terrain's effects on both friendly and enemy capabilities to shoot, move, and communicate. A number of overlays can be produced during this step--tree spacing; slope gradient; potential drop zones and alternate landing sites; river fording sites; and non-trafficable terrain to name a few.

Step three is weather analysis and is inseparable from terrain analysis. Here the intelligence officer focuses on how weather affects friendly and enemy capabilities. This step goes beyond just examining meteorological studies and weather forecasts to analyze, for example, how weather will affect specific weapons systems or impact on otherwise trafficable terrain. Here too a number of overlays can be produced--seasonal fog patterns and depth of snow cover to name but two.

About this time, all of the terrain and weather overlays are combined to create a combined obstacles overlay which depicts all the major terrain and weather obstacles that can influence mobility. The intelligence officer then identifies the terrain with the best mobility to support the enemy commander's mission. These avenues or axes are then tailored to specific sized units. For example, a brigade-sized avenue of approach may have two or

three battalion-sized mobility corridors. The combined obstacle overlay is a graphic depiction of what would have been included in paragraph 2 (Area of Operations) of a traditional intelligence estimate.

Step four in the IPB process is threat evaluation. This is a detailed threat analysis of enemy doctrine, tactics, weapons, and equipment. This analysis emphasizes the capability to use forces in specific areas and climates of the world. During this stage the assembled enemy data is converted to graphic displays known as doctrinal templates. These templates can show spatial distribution of elements within units or forces or even display capabilities within the electromagnetic spectrum. Critical information obtained during this phase can be included in paragraph 3 (Enemy Situation) of the intelligence estimate.

During threat evaluation, the intelligence officer in concert with the operations and fire support staffs conducts target value analysis (TVA). Through an analysis of enemy doctrine and practices, TVA provides the basis for determining and locating elements or assets that are critical to enemy success. These elements or assets are known, at the tactical level, as high value targets (HVTs).

All of this leads to the final and most critical step--threat integration. During threat integration, intelligence officers relate terrain and weather to enemy capabilities to

determine how the enemy might fight within a specific battlefield environment. This evaluation is driven by an assessment of the enemy commander's objective. Some might argue that intelligence estimates must be concerned with capabilities alone; however, IPB requires the synthesis of enemy capabilities and intent. Failure to combine the two denies the friendly commander the ability to shape and synchronize the battlefield. Shaping and synchronizing refers to the commander's ability to set the conditions of the battle on his terms and to arrange battlefield activities in time and space to maximize combat power. Otherwise, the commander is merely reacting and will never get within the opposing commander's decision cycle.

Enemy intent and objectives are usually derived from the higher headquarters estimate and based upon what is known about enemy doctrine, training, and strategic aims. It is tailored to the level of combat for which the IPB is being conducted. As a rule of thumb, the intelligence officer should be concerned with the enemy objectives of at least two echelons higher and one lower. For example, an Army division's IPB should address the opposing enemy's division, corps, and army/front objectives as well as enemy regiments or brigades. During this step in the process a number of other templates are developed which complete the intelligence estimate. They serve as a basis for the intelligence collection plan; and are tools for the commander and

his staff to develop, war game, and synchronize friendly courses of action.

The first of these templates is the situational template which modifies the doctrinal template to show a potential enemy course of action. The primary consideration here is focused on the terrain and weather and if the enemy has enough space to move or defend according to his doctrine or practices. The intelligence officer uses military judgement to fit the enemy forces on the terrain and considers enemy attempts to achieve surprise. A series of situational templates will be developed showing all possible enemy courses of action. This roughly corresponds to paragraph 4 (Enemy Courses of Actions) of the intelligence estimate. This is the last action which intelligence officers can complete in isolation. At this point in the process, the intelligence briefing is given to the commander and planning staff and the process becomes a coordinated staff effort which is driven by the intelligence preparation.

The second template is the event template which depicts projected battlefield events and enemy activities which provide indicators of enemy courses of action. As such they are a series of snapshots of enemy activity and form the basis for staff wargaming. As the enemy force is visualized, critical areas become apparent. These areas are significant because within them

significant events and activities occur and high value targets may appear. These areas are called named areas of interest (NAIs). An NAI is a point or area where enemy activity or absence of activity will confirm or deny a particular enemy course of action. In conjuncture with the event template, intelligence officers prepare an events analysis matrix which adds time factors to the basic process. In most cases, the matrix shows the estimated time between NAIs. The movement rate is derived from enemy doctrine and military judgement and is influenced by terrain and seasonal weather conditions. The event template and events analysis matrix become the basis for the intelligence collection plan by estimating when and where intelligence assets should be focused.

The final template is the decision support template (DST) which depicts both enemy activity as shown on the event template and the results of the staff wargaming. It shows those friendly decisions that the commander must make in response to battlefield events as determined by wargaming. The template depicts decision points (DPs) which equate time and space to specific points on the battlefield. These points are determined by comparing times required to implement decisions, enemy movement rates, and distances. For example, when enemy activity is confirmed at a specific NAI which may also be a DP, the commander intends to issue a warning order launching a helicopter attack to interdict a second echelon force at a preplanned target. This is not a

..
..
battle map nor does it dictate decisions. It is, however, a tool to assist in the synchronization of the battle and to highlight opportunities whereby the commander can shape the battlefield rather than merely react.

The Army has found IPB to be an important means to provide a systematic way to analyze the terrain, weather, and enemy before the battle and as a way to reassess changing situations during operations. Moreover, it facilitates friendly course of action development and wargaming, and provides a vehicle with which to address the process of synchronization.

Though Clausewitz was certainly apprehensive about assigning crucial importance to intelligence reports, he was clearly adamant about the need for a commander or military genius to gain a "sense of locality." ² Locality infers an understanding of the area of operations and, in this regard, IPB is possibly as good a projection of the battlefield as most modern commanders may get.

IV

IPB AT THE OPERATIONAL LEVEL

'The ultimate objective of intelligence is to enable action to be optimized. The individual or body which has to decide on action needs information about its opponent as an ingredient likely to be vital in determining its decision...'¹

Can the IPB process be modified adequately to support the needs of the operational level commander? I submit the answer is yes because the commonality of the tasks of the intelligence officer remains much the same as at the tactical level except that the analytical framework is broadened.² This is certainly not to suggest that the leap from tactical to operational level intelligence is minimal. However, the systematic process conducted for tactical level IPB can be continued at the operational level given some changes in perspective.

First, instead of focusing almost exclusively on the enemy's doctrine and capabilities, the impact of environment on weapons systems and maneuverability, and the affect of the latter on the former--the operational level intelligence officer must examine larger enemy formations and broader military issues and activities, like C3I, logistical infrastructure, and mobilization. In addition, economic, political, and socio-psychological factors must be included in this estimate.

Second, the scale of the intelligence work becomes grander and the time period analyzed becomes longer. For

example, 1:50,000 scale maps are probably replaced by 1:250,000 scale maps and certain time considerations are probably measured in days vice hours. Concomitantly, there is much less need for detailed terrain and weather analysis as the area of operations expands to cover part or all of the theater of operations. As such, the focus extends deeper, the breadth of the flanks and rear area widens, and the importance of man-made features and lines of communications increases. Moreover, it probably now incorporates most or all of the air and sea environment as well.

Third, the issue of shaping the battle becomes even more prominent in the process at the operational level. Now during threat evaluation, target value analysis, which is conducted at the tactical level to determine high value targets, is used to define the operational centers of gravity. This is possibly the single most important contribution of the intelligence officer at the operational level.

Fourth, upon determining the operational center of gravity, the threat integration step should be approached differently than at the tactical level. Tactically, IPB focuses upon determining the enemy course of action and then allocating and prioritizing intelligence collection to confirm or deny enemy activity. Thus, it appears then to precede from specifics about the terrain, weather, and the enemy towards a reasoned generalization.

At the operational level; however, it is best to approach threat integration deductively. It must begin with an understanding of what the commander envisions as military success in light of the strategic objectives and then determines what conditions are required to achieve that success. Therefore IPB at the operational level works from the general to the specific. Accordingly, while threat evaluation identifies the enemy center of gravity, threat integration focuses upon determining the enemy culminating point. In other words, threat integration provides the when and where for the operational commander to apply his defeat mechanism to defeat or destroy the enemy center of gravity. Not surprisingly, this is a total staff effort and certainly not just the work of the intelligence officer. However, just like at the tactical level, the intelligence preparation drives the process that will develop the basic plan and its branches and sequels.

Recognizing the aforementioned changes in the analytical framework of IPB at the operational level, I submit that despite changes in scope, the process, as outlined in the preceding section, can be continued. This paper will now illustrate some of its specific applicability at the operational level and discuss two joint areas of concern where it can figure prominently -- air operations and maritime support for land operations.

V

IPB AND AIR OPERATIONS

'IPB ... is a concept applicable to all campaigns--ground, air, or maritime. It is a philosophy I've adopted as my own...'

Brigadier General Clapper, USAF ¹

Moving from the tactical to operational level of combat, the role of firepower is arguably in ascendance vis-a-vis maneuver as the principle defeat mechanism. Consequently, the analysis and development of deep targets becomes more critical. The IPB process can support the targeting and synchronizing of the air operations and campaigns. ² For example, if the operational commander is assigned a defensive mission, IPB can support air targeting and synchronization as follows.

-- It can define enemy avenues of approach and mobility corridors which may show forward assembly areas and probable resupply routes which assists in planning close air support.

-- The convergence of those supply routes identify critical nodes. Often the linkage of critical nodes, trans-shipment points, and storage areas can determine enemy lines of communications which are probable high payoff targets for battlefield air interdiction.

-- Continuing the analysis of the lines of communications deeper can present mobilization centers and, along with determining the enemy center of gravity, define potential strategic air targets.

-- Calculating enemy movement rates, identifying NAIs along the avenues of approach and lines of communications, and assigning intelligence collection to monitor NAIs can assist in synchronizing the execution of battlefield air interdiction missions which disrupt the flow and commitment of second echelon and follow-on forces.

-- Preparing event templates can be utilized to plan air reconnaissance missions.

-- Using a decision support template (DST) at the Joint Force Air Component Command (JFACC) could add some flexibility to their operations. Given the criticism that the JFACC is not responsive to requests for air strikes against targets of opportunity, the IPB process, resulting in the preparation of a DST, presents a graphic and very understandable depiction of the subordinate commander's intent as well as the time and space considerations affecting his request. Therefore, I submit that because IPB is a continuous process that flexibly responds to the changing threat, justifications for immediate requests could be more forthcoming or evident at the JFACC. Accordingly, a prompter response may be elicited, rather than waiting for the next targeting meeting.

VI

IPB AND MARITIME SUPPORT

'I want you to be specific. After all this is the job I have given you--to be the admiral commanding the Japanese forces, and tell me what is going on.'

Admiral Nimitz at Midway ¹

Admiral Nimitz's words were spoken to Captain Layton, his fleet intelligence officer, during the planning for the Battle of Midway. It clearly illustrates what one successful naval commander expected his intelligence officer to provide. It also suggests that Nimitz may not have received what he wanted from his intelligence staff to that point in the planning for Midway. Layton admitted that he was hesitant to respond to the order from Nimitz, but knew he had no choice. The fleet intelligence staff was beneficiary of lucrative Japanese radio intercepts; possessed good cryptanalysis capability; and had sufficient time to analyze the reports. However, they lacked a process that put some meaning to the reporting. According to Layton, 'what saved the whole system from collapsing was the team's overall easy going lack of hierarchy and its remarkable ability to recall details of decryptions made months earlier.' ² Though Layton gave the correct estimate to Nimitz and the Navy won at the Battle of Midway, there is probably very little from Layton's system that we would want to apply on today's battlefield.

In addition to assisting in targeting and synchronizing air operations, IPB is suitable, albeit with modification, to support maritime operations and maritime support of land operations.

First, IPB provides a methodology adaptive to examining and integrating weather and oceanographic factors that impact on planning and executing maritime operations. Just as in ground operations, these factors oftentimes determine the when and where of a mission.

Second, IPB, even in its current form, is clearly applicable in marine amphibious operations, especially in opposed landings. Besides determining landing site selection, IPB templating can assist with targeting and in the interdiction of enemy sustainment efforts and possible reinforcements. Given the absence of another General MacArthur, a landing similar to Inchon would require extensive intelligence preparation and analysis.

Third, event templating provides a foundation for determining intelligence requirements and allocating resources to support the operation.

Fourth, event and situation templating provide a bridge of sorts for dealing with the aggregate analysis of technologically-derived combat information needed to determine enemy intentions and conduct predictive intelligence. These graphics might have helped Layton to answer Nimitz's question sooner and helped

Nimitz to explain their estimate of the situation to Admiral King and his staff in Washington.

Fifth, because it is such an integral part of AirLand Battle planning, knowledge of the process will assist the naval component in better understanding how the land component intends to shape the battle. Herein it provides two functions. First, it elucidates requests for air support and naval gunfire. Second, it equips the naval component with an ability to better anticipate requests for supporting operations.

Sixth, IPB provides an analytical framework which allows intelligence officers and planners to conceptualize and synchronize the battle in terms of mission, environment, enemy, time, and space considerations. Moreover, it encourages and demands full staff participation and interplay. In this regard, Admiral Spruance's staff at the Battle of Midway might have fared better in calculating the time to launch the aircraft against the Japanese fleet.³

Seventh, the process requires planners to consider branches and sequels. Just as strategists ask counter-factual questions, threat integration at both the tactical and operational levels is a means for staffs to explore branches and sequels and to synchronize in advance rather than to react. For example, if IPB had been conducted at the Battle of Leyte Gulf, CinCPac would

have established NAIs over suspected locations of the Japanese Northern Force; identified them as decision points; and tasked a collection asset to monitor. Upon confirmation of enemy activity at one of the NAIs, Nimitz could then decide to dispatch Admiral Halsey's Third Fleet to engage. While all of this was being developed the issue of leaving some force to guard the San Bernadino Strait would most likely been addressed. ⁴

VII

IPB, JOINT DOCTRINE, AND THE COUNTERARGUMENT

'With uncertainty in one scale, courage and self-confidence must be thrown into the other to correct the balance.'

Clausewitz ¹

The Leyte Gulf example illustrates that a systematic staff process linking intelligence and decision-making was missing as Admiral Nimitz, his staff, and his subordinate commanders planned and developed that operation. Here, the IPB process might have filled that void. However, a review of current joint intelligence doctrine and the joint instructional text on intelligence shows a continued emphasis on the traditional formatted estimate. ² In addition, instead of demanding synergism between intelligence and operations staffs, these joint publications continue to emphasize intelligence principles and formatted textual products. Armed with only a format, an

operational or joint staff increasingly risks the chance of repeating a Leyte Gulf-type situation.

Failing to implement an IPB-type process at the operational level carries with it a number of missed opportunities. First, it fails to recognize the degree to which intelligence drives planning, wargaming, decision-making, and synchronization. I submit that neither publication vigorously integrates intelligence into decision-making like IPB has done with the Army and AirLand Battle doctrine.

Second, the absence of a process fails to improve joint interoperability. In addition to each service operating with different practices, the formation of standing joint intelligence centers; the increased potential for minor regional conflicts with ad hoc JTFs; and a conceivable command structure like URGENT FURY, where a non-Army commander may lead a ground operation, demonstrates the need for an interoperable intelligence process.

Third, by demanding the intelligence officer's participation in operational planning from the onset of the deliberate planning process, and the presentation of intelligence in a graphic and more useable format, IPB is a mechanism to assist in educating operational staffs about the uses and limitations of intelligence prior to execution or crisis action planning. Concomitantly, in a subtle way, IPB is a means to overcome some residual cultural bias between operations and intelligence which still remains in some quarters. ³

Some may argue that the IPB process is flawed and unnecessary. For some, the process is easy prey to mirror-imaging by intelligence officers who apply friendly doctrine and intentions to the enemy. Admittedly, the potential is possible in any intelligence estimate; however, it is overcome by an experienced and well-trained intelligence officer.

A second argument against IPB is that it heightens 'an expectation that IPB will provide the basis to tell what the enemy will do before he does it.' ⁴ This argument contends that determining enemy intentions in advance is impossible; that attempts to do so puts the commander at risk of defeat by enemy surprise; and that Clausewitz was correct in his assessment of the unreliability of intelligence. ⁵

This argument can, I believe, be dismissed on three counts. First, IPB's extensive use of NAIs, which are monitored by intelligence collection assets and tied to operational decision points, adds flexibility to a plan by cuing the planning and executing of branches and sequels. Second, the argument ignores the technological advances made in intelligence since Clausewitz. While not solving the quest for certainty, these technical advances have improved reliability and provided marked advantage to those possessing them, especially at the operational and strategic level. Therefore, the issue today is not whether or not we should determine intentions--Admiral Nimitz's order to

Captain Layton answers that--but how do we do it and give meaning to all the signals, images and reports that are available. Finally, and this bears repeating, failing to plan from a reasoned projection of the enemy intention and doing so just from his capabilities, surrenders a degree of the friendly commander's initiative, and thus minimizes his chances of shaping and synchronizing the battlefield.

The counterarguments do not, in my opinion, invalidate the IPB process at any level. Though no process can be a formula for a successful estimate or a panacea for staff synchronization, the Army's success with IPB merits attention at the operational level and by other services. The intelligence dialectic, discussed at the beginning of this paper, established the commonality of purpose between all military intelligence work. Current global realities, highlighted by an increased probability of involvement in minor regional conflicts and reduced warning time, plus potential joint service command and control structures require a common process that will systematize the procedures used by intelligence officers today. Moreover, an IPB-type process provides more than just a way to standardize intelligence practices -- it links intelligence, operations, and decision-making which can significantly improve a commander's ability to shape and synchronize.

VIII

CONCLUSION AND RECOMMENDATION

'Finally the general unreliability of all information presents a special problem in war: all action takes place, so to speak, in a kind of twilight,... Whatever is hidden from full view in this feeble light has to be guessed at by talent, or simply left to chance. So once again, for lack of objective knowledge, one has to trust to talent or luck.'

Clausewitz¹

Given that choice between talent or luck, the operational commander would surely choose talent. Notwithstanding the talent of the commander, the talent of the intelligence officer is critical. The latter's talent must transcend the sophisticated capabilities of advanced technology to sort and process that information into a reasoned prediction. This ability is innate or intuitive in just a few officers. However, for most it can be acquired or trained. IPB is a tool to that end.

IPB significantly improved the analytical capabilities of nearly a generation of Army intelligence officers and was critical in making AirLand Battle possible. It allowed commanders to see and target deep; fostered initiative by presenting targets of opportunity; provided a mechanism to develop staff synchronization; and facilitated agile responses to rapid changes on the battlefield. I believe that these

capabilities are not IPB-unique, but general intelligence requirements which exceed the exclusive needs of the Army at its tactical level. The process is therefore fitting at the operational level and not just to the Army component. Its basic tenets are suitable for use by air and naval components as both an intelligence and staff synchronization process because:

- IPB is a simple and logical process which is understandable to all services and probably even to coalition partners;

- IPB adds some structure to the battlefield which facilitates shaping the battle rather than reacting to events and provides a common framework to plan joint operations;

- IPB provides intelligence analysts with a framework to more quickly derive meaning from combat information;

- IPB demands full participation of the intelligence officer in the planning process, consequently requiring a warfighting focus rather than an academic-styled estimate; and

- IPB affords a vehicle for improved staff synchronization.

The National Security Strategy of the United States recognizes the "growing burden on intelligence collection, processing, and analysis." ² Consequently, the theater commands and their service components must recognize their

increased responsibility to conduct vigorous intelligence preparation for potential contingencies. Therefore, I propose that a joint intelligence process is critical and must be included in joint intelligence publications. Without a process which encourages the intelligence officer's active participation in decision-making and creates products which display the intelligence estimate in a more useable format, joint intelligence officers might continue to produce estimates to an academic standard wherein critical information is found in the midst of a lengthy text; known only to a few; and uncovered only during an after-action review or investigation of an intelligence failure.

ENDNOTES

Chapter I

1. Carl von Clausewitz, On War, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1989), page 117.
2. Martin van Crevald, Command in War (Cambridge: Harvard University Press, 1988), page 264.
3. See Michael I. Handel, Intelligence and Military Operations (London: Frank Cass and Company, 1990), pages 1-98 and Crevald, ibid, pages 264-276.

Chapter II

1. Sun Tzu, The Art of War, translated by Samuel B Griffith (Oxford: Oxford University Press, 1971), page 71.
2. The IPB process is described in a number of Army field manuals and training circulars; however, the principle document is FM 34-130 Intelligence Preparation of the Battlefield, 1990. The Army's command estimate process and procedures for tactical decision-making are contained in FM 101-5 Staff Organization and Operations, 1984, and CGSC Student Text 100-9 The Command Estimate, 1991. See Major Douglas Campbell, 'The Real IPB,' Military Review, October 1990, pages 84-87 for a revisionary essay on the synthesis of IPB and tactical decision-making.
3. See General William Livsey, 'IPB and the Theater Campaign,' Military Intelligence, October 1987, pages 20-21; General Glenn Otis, 'A Commander's Perspective on the Tactical Intelligence System,' Military Intelligence, April-June 1986, pages 19-21; and Colonel Mark Hamilton, 'IPB or IPC?' Military Intelligence, April-June 1990, pages 24-27 for testimonies on the value of IPB.
4. Campbell, op cit, page 84.

Chapter III

1. Sun Tzu, op cit, page 129.
2. Clausewitz, op cit, page 109.

Chapter IV

1. Jones, R.V., 'Intelligence and Command,' edited by Michael I. Handel, Leaders and Intelligence (London: Frank Cass and Company, 1988), page 288.
2. See Larry Buel, 'Intelligence Preparation of the Battlefield,' Military Review, October 1987, pages 24-33 and Thomas Purcell, 'Operational Level Intelligence' (US Army War College: distributed by Defense Technical Information Center, 1989), for a discussion of IPB at the Army's operational level.

Chapter V

1. Brigadier General James R. Clapper, 'An Open Letter to Army Military Intelligence,' Military Intelligence January 1988, page 58.
2. See Livsey, op cit.

Chapter VI

1. Edwin T. Layton, And I Was There - Pearl Harbor and Midway - Breaking the Secrets (New York: Morrow, 1986), page 430.
2. Ibid, page 423.
3. See Thomas Buell, The Quiet Warrior: A Biography of Admiral Raymond A. Spruance (Annapolis: Naval Institute Press, 1987), pages 137-166.
4. See Hanson Baldwin, 'The SHO Plan-The Battle of Leyte Gulf-1944,' Sea Fights and Shipwrecks (New York: Hanover House, 1955), pages 134-182 and E.B. Potter, Nimitz, (Annapolis: Naval Institute Press, 1979), pages 335-343.

Chapter VII

1. Clausewitz, op cit, page 86.
2. See JCS Pub 2-0 Doctrine for Intelligence Support to Joint Operations (Test), 1991 and AFSC Pub #5 Intelligence for Joint Forces, 1988.
3. Handel, Intelligence and Military Operations, pages 21-32.

4. Major Russell Thaden, "Intelligence Preparation of the Battlefield and Predictive Intelligence," Military Intelligence, January 1989, page 16.

5. Clausewitz, op cit, page 117.

Chapter VIII

1. Clausewitz, op cit, page 140.

2. U.S. President, National Security Strategy for the United States (Washington: Government Printing Office, 1991), page 16.

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